

Final
Renumbered Claims Listing for Serial # 09/390,090

AMENDMENTS TO THE CLAIMS

(IN FORMAT COMPLIANT WITH THE REVISED 37 CFR 1.121)

Please cancel claim 3 without prejudice.

1. (CURRENTLY AMENDED) A time-shifted video method comprising the steps of:

a first buffering of an input signal having a digital video format;

5 compressing said input signal in parallel with said first buffering, said compressing including a second buffering of said input signal;

10 in a real-time mode, delivering a plurality of real-time video frames along a first processing path to an output for display in response to said input signal as first buffered;

15 in a time-shifted mode, delivering a plurality of time-shifted video frames along a second processing path to said output for display in response to said input signal as compressed, said time-shifted video frames being delayed relative to said real-time video frames; and

pausing at a particular one of said real-time frames during a transition from said real-time mode to said time-shifted mode, wherein said time shifted mode comprises a fast forward or a fast rewind.

2. (PREVIOUSLY PRESENTED) The method of claim 1, wherein said transition is between said particular real-time frame and a time-shifted version of said particular real-time frame.

~~3.~~ (CANCELED)

4. (CURRENTLY AMENDED) The method of claim 1, wherein said transition is ~~triggered~~ caused by a single command of a viewer.

5. (PREVIOUSLY PRESENTED) The method of claim 1, wherein the real-time video frames are derived from uncompressed video.

~~6.~~ (CANCELED)

6 ~~7.~~ (PREVIOUSLY PRESENTED) The method of claim 1, wherein said real-time video frames are derived from said input signal having a compressed video format.

7 ~~8.~~ (PREVIOUSLY PRESENTED) The method of claim ~~7.~~ 6 wherein said real-time video frames are provided from a decoder that decompresses said input signal.

9. (PREVIOUSLY PRESENTED) The method of claim 1, wherein the real-time mode, the time-shifted mode, and the transition are provided by a single codec chip.

8 ~~10~~ (PREVIOUSLY PRESENTED) The method of claim ⁷/~~8~~, wherein said input signal comprises MPEG video.

10 ~~11~~ (PREVIOUSLY PRESENTED) The method of claim 1, wherein (i) information is stored identifying said particular real-time video frame and (ii) before the time-shifted mode occurs, a next frame of said time-shifted video frames in display sequence
5 after said particular real-time video frame is queued up for display such that said transition is from said particular real-time video frame to said next frame of said time-shifted video frames.

~~12~~. (CANCELED)

~~13~~. (CANCELED)

17 ~~14~~ (PREVIOUSLY PRESENTED) The apparatus according to claim ~~22~~ ¹⁶, wherein said real-time decoder and said time-shifted decoder are provided in a single codec.

20 ~~15.~~ (PREVIOUSLY PRESENTED) The apparatus of claim ~~23~~¹⁹,
having a first processing path for said real-time mode and a second
processing path for said time-shifted mode.

14 ~~16.~~ (PREVIOUSLY PRESENTED) The apparatus of claim ~~21~~¹³,
wherein the encoder and the time-shifted decoder are provided in a
single codec.

~~17.~~ (CANCELED)

21 ~~18.~~ (PREVIOUSLY PRESENTED) The apparatus of claim ~~23~~¹⁹,
wherein the apparatus comprises a set-top box.

22 ~~19.~~ (PREVIOUSLY PRESENTED) The apparatus of claim ~~23~~¹⁹,
wherein said output signal is viewable by an analog television.

12 ~~20.~~ (CURRENTLY AMENDED) An apparatus comprising:
a real-time decoder configured to (i) generate a first
output signal by decompressing a compressed digital video input
signal and (ii) pause a frame of said first output signal during a
transition from a first mode to a second mode;

5 a frame storage system configured to store said
compressed digital video input signal separately from said real-
time decoder;

10 a time-shifted decoder (i) coupled to said frame storage
system and (ii) configured to generate a second output signal in
response to said compressed digital video input signal stored in
said frame storage system; and

15 a controller configured to generate a command configured
to control presenting (i) said first output signal when in said
first mode and (ii) said second output signal when in said second
mode, wherein said second mode comprises a fast forward or a fast
rewind.

13 ~~21.~~ (CURRENTLY AMENDED) An apparatus comprising:

an input for receiving a video signal in an uncompressed
format;

5 a frame buffer directly connected to said input and
configured to (i) generate a first output signal by buffering said
video signal and (ii) pause said first output signal at a frame
during a transition from a first mode to a second mode;

an encoder configured to generate a first intermediate
signal by compressing said video signal;

10 a controller separate from said encoder and configured to
(i) receive said first intermediate signal and (ii) present a
second intermediate signal;

15 a frame storage system directly connected to said
controller and configured to (i) store said first intermediate
signal and (ii) generate said second intermediate signal; and

a time-shifted decoder separate from said controller and configured to generate a second output signal by decompressing said second intermediate signal, wherein said controller is further configured to generate a command configured to control presenting (i) said first output signal when in said first mode and (ii) said second output signal when in said second mode, wherein said second mode comprises a fast forward or a fast rewind.

16 ~~22.~~ (CURRENTLY AMENDED) An apparatus comprising:

a controller configured to receive (i) a first command and (ii) a video input signal in a compressed format;

5 a real-time decoder configured to (i) generate a first output signal in response to decompressing said video input signal and (ii) pause a frame of said first output signal during a transition from a first mode to a second mode;

a frame storage system coupled to said controller to exchange said video input signal; and

10 a time-shifted decoder coupled to said controller and configured to generate a second output signal in response to (i) said video input signal received from said controller and (ii) said first command;

15 wherein said controller is further configured to generate a second command to control presenting (i) said first output signal when in said first mode and (ii) said second output signal when in

said second mode, wherein said second mode comprises a fast forward or a fast rewind.

19 ~~23~~. (CURRENTLY AMENDED) An apparatus comprising:

a first frame buffer configured to (i) generate a first signal and a second signal by buffering an input signal, (ii) pause said first signal at a frame during a transition from a real-time mode to a time-shifted mode and (iii) buffer a third signal;

a controller connected to said first frame buffer to receive said third signal;

a buffer connected to said controller to store said third signal;

10 an encoder connected to said first frame buffer and configured to generate said third signal by compressing said second signal;

a decoder configured to generate a fourth signal by decompressing said third signal as retrieved from said buffer; and

15 a switch connected to said first frame buffer and configured to present an output signal comprising (i) said first signal when in said real-time mode and (ii) said fourth signal when in said time-shifted mode, wherein said time shifted mode comprises a fast forward or a fast rewind.

3 ~~24~~. (ORIGINAL) The method according to claim 2, wherein said transition is seamless to a viewer.

~~11~~ 25. (PREVIOUSLY PRESENTED) The method of claim 1, wherein said transition is triggered by an event generated by software.

~~26.~~ (CANCELED)

~~18~~ ~~21~~ 22. (PREVIOUSLY PRESENTED) The apparatus according to claim ~~22~~, further comprising a demultiplexer configured to demultiplex said video input signal to said real-time decoder and said controller.

~~15~~ ~~28~~ 29. (PREVIOUSLY PRESENTED) The apparatus according to claim ~~21~~, wherein said encoder receives said video signal from said frame buffer.

~~23~~ ~~29~~ 30. (PREVIOUSLY PRESENTED) The apparatus according to claim ~~23~~, further comprising a second frame buffer disposed between said controller, said time-shifted decoder and said switch and configured to (i) buffer said third signal retrieved from said buffer and (ii) buffer said fourth signal prior to said switch.